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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,226	01/22/2002	Won-Kyu Lee	6192.0278.AA	7988

7590

02/23/2006

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EXAMINER

SHENG, TOM V

ART UNIT	PAPER NUMBER
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2677

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/051,226

Applicant(s)

LEE ET AL.

Examiner

Tom V. Sheng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/23/05 & 10/26/05.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6-11 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 12-14 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 15 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear if the limitation "I is a natural number obtained by subtracting 1 from the number of blocks constituting a picture of the TFT-LCD" as this would mean I is only a constant. This would not define all the boundary pixels between adjacent blocks except the ones between the block before the last block and the last block.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-3 and 12-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Song et al. (US Patent 6,313,889 B1).

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The applied reference has a common assignee with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As for claim 1, Song teaches a thin film transistor liquid crystal display (figure 18) of a line inversion type, comprising:

a plurality of pixels (one pixel PX shown) arranged in a matrix (it's a matrix type display) and divided into a plurality of blocks for block-driving (Song's individual data line with corresponding pixels can be considered as a block for block-driving), each block having a boundary pixel at a boundary thereof (in this case, every pixel is a boundary pixel);

a plurality of pixel electrodes (each pixel electrode is the area defined by the gate line and data line as shown) formed corresponding to the pixels (pixel PX shown); and

a plurality of data lines formed corresponding to the pixel electrodes (each data line has corresponding pixels to be driven) and comprising a boundary data line (in this case is any data line D) provided corresponding to the boundary pixel (corresponding pixel(s) PX);

wherein the boundary data line has an extension part overlapping a portion of the pixel electrode corresponding to the boundary pixel (a connect portion 21 as a branch of

a data line D extends to and being overlapped with a pixel electrode 10; column 15, lines 36-50).

As for claim 2, Song's pixels read on claimed boundary pixels between an $(IN)^{th}$ data line and an $(IN+1)^{th}$ data line in the case where N is 1.

As for claim 3, the connect portion 21 is a width extending toward the pixel electrode from the data line D.

Claim 12 is similarly analyzed as rejection of claim 1. Further, since each data line D and corresponding pixels of Song is considered a block, Song's data line is both a boundary data line and a non-boundary data line.

As for claim 13, it is inherent that the pixel electrodes be made of a transparent conductive material for a transmissive display.

As for claim 14, it is inherent that the pixel electrodes be made of a reflective conductive material for a reflective display.

Allowable Subject Matter

5. Claims 6-11 are allowed.
6. Claims 4, 5, 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter: none of the prior arts teaches the limitations "wherein the extension part is composed of extension pieces protruding from the data line to each pixel electrode of

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the boundary pixels” of claim 4, “wherein an area of the extension part is substantially equal to an area of a pixel electrode that overlaps a data line arranged over a portion of the pixel electrode” of claim 5, “the pixel electrode having an area overlapping an adjacent data line passing around the respective pixels, wherein the TFT-LCD further comprises at least one of the plurality of data lines having an extension part overlapping at least one of the plurality of pixel electrodes of a boundary pixel” of claim 6, “wherein at least one data line comprises a first extension part arranged substantially across the boundary pixel electrode and a second extension part that extends from an end of the first extension part” of claim 15, and “wherein an area of overlap between the pixel electrode of the boundary pixel and the data line arranged over the pixel electrode of the boundary pixel is larger than an area of overlap between a second pixel electrode of a second pixel and a second data line arranged over the second pixel electrode” of claim 16. Claims 7-11 are dependent on claim 6.

Response to Arguments

8. Applicant's arguments filed on 4/22/2005 have been fully considered but they are not persuasive.

As for claim 1, applicants argue that, as amended, Song fails to disclose or suggest the concept of dividing the pixels into a plurality of blocks for block driving. Thus, Song would not be able to disclose or suggest the claimed features of (a) each block having a boundary pixel, (b) a boundary data line provided corresponding to the

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boundary pixel, (c) the boundary data line having an extension part overlapping a portion of the pixel electrode corresponding to the boundary pixel.

The Examiner disagrees. Even though Song does not explicitly teach dividing and driving the pixels in blocks, the use of individual data line does represents the specific case of 1 data line per block (i.e. $N=1$). In this case, every data line can also be considered a boundary data line and each data line does have an extension part (connect portion 21) overlapping a portion of a corresponding pixel PX.

As for claim 12, the above argument applies. Further, in the case of one data line per block, the data line can be considered both as a boundary data line and a non-boundary data line. That is, there is no distinction between the two.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom V. Sheng whose telephone number is (571) 272-7684. The examiner can normally be reached on 9:00am - 6:00pm.

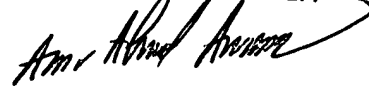
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tom Sheng
February 10, 2006

AMR A. AWAD
PRIMARY EXAMINER

A handwritten signature in black ink, appearing to read 'Amr A. Awad', written over the printed name and title.